CLAIMS

Claims 1-4, 7, 8, 10-13, 32-34 and 38 are currently pending in this application. Claims 5, 6, 9, 14-31, 35-37 and 39 were previously canceled. All such cancellations were made without prejudice or disclaimer of the subject matter thereof. Herein, Applicant amends claims 1 and 32-34 without prejudice or disclaimer of the subject matter therein.

In The Claims:

1. (Currently Amended) A method for determining the presence of a lipid product of a lipid phosphatase, comprising: (a) providing a solution containing a substrate lipid of a lipid phosphatase; (b) contacting the substrate lipid of the lipid phosphatase with a lipid detector protein containing a lipid recognition motif having a binding specificity for a product lipid of the lipid phosphatase; and utilizing a plate-based assay to determine ~~determining~~ a change in concentration of at least one of the following: substrate lipid, lipid detector protein, and lipid product, wherein a change in concentration for any of the above substances between steps (a) and (b) indicates that said product lipid is present in said solution; and further wherein said substrate or product lipids are PI(4,5)P2, PI(5)P, PI, or PI(3,4,5)P3.

2. (Previously Amended) The method according to claim 1, wherein the method is a direct assay or a competitive assay wherein said product lipid has a stronger affinity to said lipid detector protein than said substrate lipid.

3. (Previously Amended) The method according to claim 1, wherein said lipid detector protein is an antibody against said product lipid or a lipid recognition protein (LRP) with specificity for said product lipid.

4. (Previously Amended) The method according to claim 3, wherein said lipid recognition protein contains an affinity tag fusion with PH or other lipid-binding domains.

5-6. (Canceled)

7. (Previously Amended) The method according to claim 1, further comprising: prior to contacting said lipid detector protein to the solution, coating a substrate of an assay plate with a non-radioactively labeled substrate lipid.

8. (Previously Amended) The method according to claim 7, wherein said assay plate is coated with streptavidin, glutathione or Protein A.

9. (Canceled)

10. (Previously Amended) The method according to claim 1, wherein said assay is a fluorogenic assay.

11. (Previously Amended) The method according to claim 10, wherein the assay is a fluorescence polarization (FP) assay, fluorescence resonance energy transfer (FRET) assay or time-resolved fluorescence resonance energy transfer (TR-FRET) assay.

12. (Previously Amended) The method according to claim 1, wherein additional lipids are present in said solution.

13. (Previously Amended) The method according to claim 1, wherein said lipid phosphatase acts on any PIPn and is a member selected from the group consisting of SHIP1, SHIP2, PTEN, PTPRQ, SKIP, Myotubularin, MTMR2 and OCRL1.

14 - 31. (Canceled)

32. (Previously Amended) A method for screening for a disease caused alteration of a lipid phosphatase comprising the step of using the lipid phosphatase method of claim 1 to detect changes in the lipid phosphatase activity in bodily tissue, blood, or serum samples of a patient, ~~with a disease,~~ whereby detection of a change from normal levels indicates a disease caused alteration of a lipid phosphatase.

33. (Currently Amended) The method of claim 32, wherein the disease caused alteration of a lipid phosphatase is indicative of ~~is~~ non-insulin dependant, Type II diabetes.

34. (Currently Amended) The method of claim 32, wherein the disease caused alteration of a lipid phosphatase is indicative of ~~is~~ Cowden's disease or cancer.

35 - 37. (Canceled)

38. (Original) A method for screening a compound having an enhancing or inhibiting effect on a lipid phosphatase comprising the step of using the lipid phosphatase assay method of claim 1 to detect changes in the lipid phosphatase activity.

39. (Canceled)